Clark Public Utilities

Utility company in southeastern Washington coordinates the funding for an innovative energy efficiency project at WaferTech, a high-tech manufacturing plant.

1200 Fort Vancouver Way
Vancouver, WA 98661

Number of Employees: 321 **Year Founded: 1938** **Region Served: Clark County** www.clarkpublicutilities.com

Profile

Clark Public Utilities is a consumer-owned company providing electric service to more than 183,000 homes and businesses throughout Clark County. WaferTech, the largest integrated circuit semiconductor foundry in the U.S., is one of the biggest consumers of electricity in Clark County.

Thanks to a grant and loan from the State Energy Program, WaferTech has been able to invest in state-of-the-art cooling towers – and substantially reduce its annual energy usage.

Clark Public Utilities, serving southeastern Washington since 1938, manages and provides electricity and water service to thousands of residential and business customers. Five years ago, Larry Blaufus, the company's Senior Manager of Energy Technologies and Services, was seeking ways to reduce the energy footprint of his industrial customers. Could Clark Public Utilities partner with other organizations to undertake its largest energy-efficiency project to date, and save up to half a million kilowatts per hour each year?

"Maximizing our current power supply through conservation projects is the least expensive investment we can make toward future growth in Clark County," explained Blaufus. "Reduced energy use saves customers money and helps hold off a need to build additional generation facilities by making the power we have now go further."

Blaufus noted that WaferTech, a semiconductor foundry located in Camas, racked up electricity bills of $8 million every year, making it an ideal candidate to enact energy-efficiency measures.

WaferTech is the U.S. subsidiary of the Taiwan Semiconductor Manufacturing Company, the world's largest semiconductor foundry. Employing 1,000 workers, WaferTech produces components and integrated circuits for cell phones, laptop batteries, routers, car airbags and heart pacemakers, among many other consumer and manufacturing applications.

WaferTech was also investigating ways to reduce its utility costs, but the company needed a short payback period to justify investment from its parent company.

WaferTech's water cooling towers will save enough electricity to power 350 homes every year, and will reduce the annual emissions of 1.3 million pounds of carbon dioxide.

Blaufus convened a team with members representing Clark Public Utilities, WaferTech and Columbia River Economic Development Council. Working with engineers from WaferTech and consultant company WorleyParsons, the team devised a plan to replace some of its chiller units with large water cooling towers.

The team crafted a funding plan utilizing investment from WaferTech, a grant from the Washington State University Extension and incentives from the Bonneville Power Administration. A grant and loan from the State Energy Program sealed the deal.

"We were the grant recipient because we were putting all the pieces together," explained Blaufus, adding that Clark Public Utilities has staff with extensive experience managing the reporting and monitoring requirements of federal grants.

Over 2,000 construction hours, supplied by local company JH Kelly, were required to build two 33-foot-tall towers. Warm, post-manufacturing water is piped into the towers, where the naturally cool temperatures of the region cool it to as low as 60 degrees. The water is then cycled back to the electric-powered chillers for final cooling before it is used again in the manufacturing process.

"They are able to tap into a resource that's there because of our cool weather," said Blaufus. The added step of using the cooling tower reduces the time needed for cooling in the chillers, resulting in annual savings of up to $250,000.

"We're a multinational company in an extremely competitive industry," said Jim Short, Director of Facilities at WaferTech. "Locating here in the Pacific Northwest, where the mild climate can offset cooling costs, is giving us an advantage by saving us money in manufacturing and also helping to preserve the environment through reduced emissions."

The Project is projected to conserve 5,100,000 kilowatts per hour, or enough to power 350 homes per year.

"It appears that we're the first fabrication company to do something like this," said Spencer Leese, WaferTech's Corporate Attorney, adding that other companies are taking note. As the single largest energy conservation project in Clark County, it will serve as a demonstration of innovative technology for other high-tech companies.

"These kind of projects help improve our long-term viability," said Leese. "Very significantly, they give us the ability to retain and actually grow workers."

This material is based upon work supported by the Department of Energy under Award Number DE-EE0000139.